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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,650	11/27/2001	Tsutae Shinoda	522.1919-C5	1571

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EXAMINER

SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,650	SHINODA ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-30 and 32-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-18 and 47 is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,19,20 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 2,7-13,21,29,30,32-46 and 48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 0201 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/010,169.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on December 31, 2003, has been entered and acknowledged by the Examiner.

Cancellation of claims 4 and 31 has been entered.

Claims 1-3, 5-30 and 32-48 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 19, 20 and 22-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Amano (JP 59-108240).

Regarding claim 1, Amano discloses a substrate assembly comprising an insulating plate (1) having a main surface and first and second mutually perpendicular directions defined thereon plural address electrodes (3), supported on the main surface of the insulating plate (1) in spaced, parallel relationship in the first direction so as to define corresponding gaps (7) therebetween, and extending in the second direction, plural barrier ribs (5) supported on the main surface of the insulating plate (1), spaced in parallel relationship in the first direction and extending in the second direction, parallel to the plural address electrodes (3) and respectively defining plural elongated cavities (7) therebetween aligned with respective address electrodes (3), and being continuous throughout the length thereof and of a substantially common length in the second direction, and plural color phosphor layers (6) of different primary colors formed

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respectively in the plural elongated cavities and arranged in a repeating succession, in the first direction, of plural sets of color linear strips respectively of said different primary colors (Page 2, bottom right paragraph), each color phosphor linear stripe extending continuously and without interruption within, and substantially throughout the length of, the respective elongated cavity (Figs. 1-4).

Regarding claim 5, Amano discloses a substrate assembly wherein the plural address electrodes (3) are formed directly on the main surface of the insulating plate (1) and the color phosphor layers (6) are formed on the main surface of the insulating plate and covering the address electrodes.

Regarding claim 19, Amano discloses a plasma display panel comprising a first substrate (1) having a main surface and plural elongated barriers (5) disposed on the main surface in parallel relationship, spaced in a first direction and extending along the main surface in a second direction, different from the first direction, and defining corresponding plural elongated cavities (7) therebetween, each cavity extending continuously and without interruption throughout the length thereof, plural address electrodes (3), each address electrode (3) being disposed centrally of a respective cavity (7) and extending along the length of the corresponding cavity, plural sets of color phosphor stripes (6), each set comprising a common number of plural color phosphor stripes of respective, different colors received in a respective set of plural, corresponding adjacent cavities (Page 2, bottom right paragraph), each color phosphorous stripe being continuous and uninterrupted throughout a length thereof and each cavity having only a single, continuous and uninterrupted length color phosphor stripe therein, and a second substrate (2) disposed on the first substrate and having plural display electrodes (4) thereon, extending in the first direction and crossing the barrier ribs (5) and the corresponding cavities (7) and respective address electrodes (3), and thereby defining an array of plural surface discharge

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cells arranged in rows in the first direction and columns in the second direction, individual discharge cells of each row being separated by corresponding barrier ribs and individual discharge cells of each column being defined by the respective display electrodes crossing the respective cavity (Figs. 1-4).

Regarding claim 20, Amano discloses a plasma display panel wherein each row of discharge cells, of the array thereof, has associated therewith and is defined by respective first and second display electrodes extending in the first direction and crossing the plural cavities (Fig. 1).

Regarding claim 22, Amano discloses a plasma display panel wherein each image element comprises plural unit luminescent areas of respective plural primary colors, each luminescent unit area comprising a discharge cell (Fig. 1).

Regarding claim 23, Amano discloses a plasma display panel wherein each cavity corresponds to, and includes, a respective row of plural, spaced discharge cells of the plasma display panel (Fig. 1).

Regarding claim 24, Amano discloses a substrate assembly comprising a first substrate (1) having a main surface and plural elongated barrier ribs (5) disposed on the main surface in parallel relationship, spaced in a first direction and extending along the main surface in a second direction, different from the first direction, and defining corresponding plural elongated cavities (7) therebetween, each cavity (7) extending continuously and without interruption throughout a length thereof, plural address electrodes (3), each address electrode (3) aligned with a respective elongated cavity (7) and extending along the length of the corresponding cavity (7), and plural sets of color phosphor stripes (6), each set comprising a common number of plural color phosphor stripes of respective, different colors received in a respective set of plural, corresponding adjacent cavities (Page 2, bottom right paragraph), each color

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phosphorous stripe covering the respective address electrode (3) in the corresponding cavity (7) and being continuous and extending without interruption throughout a length thereof and each cavity having only a single, continuous length color phosphor stripe therein (Figs.1 and 4).

Regarding claim 25, Amano discloses a substrate assembly wherein the plasma display panel has plural image elements arranged in parallel rows in the first direction and parallel columns in the second direction, the plural columns of image elements respectively corresponding to the plural sets of color phosphor stripes and the plural image elements of each column, corresponding to respective rows, comprising respective portions, spaced in the second direction, of the respective set of color phosphor stripes (Fig. 1).

Regarding claim 26, Amano discloses a substrate assembly wherein each set of color phosphor stripes comprises first, second and third adjacent stripes of respective, different primary colors (Page 2, bottom right paragraph), and each image element comprises first, second and third discharge cells corresponding to the respective portions of the respective first, second and third phosphor stripes of the respective set thereof corresponding to the image element.

Regarding claim 27, Amano discloses a substrate assembly wherein each cavity corresponds to, and includes, a respective row of plural, spaced discharge cells of the plasma display panel (Fig. 1).

Regarding claim 28, Amano discloses a substrate assembly for a surface discharge type plasma display panel having plural discharge cells arranged in plural rows and columns, each row comprising plural discharge cells corresponding respectively to the plural columns thereof, comprising an insulating plate (1) having a main surface and first and second mutually perpendicular directions defined thereon, plural address electrodes (3) supported on the main surface of the insulating plate (1), spaced in parallel relationship and so as to define

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corresponding gaps (7) therebetween in the first direction and extending in the second direction, the plural address electrodes (3) corresponding respectively to the plural columns of discharge cells (7), plural barrier ribs (5) supported on the main surface of the insulating plate (1) and disposed respectively in the corresponding gaps between the plural address electrodes (3) and correspondingly spaced in parallel relationship in the first direction and extending in the second direction, parallel to the plural address electrodes (3) and respectively defining plural elongated cavities therebetween, the plural elongated cavities (7) being of a substantially common length in the second direction and each elongated cavity being continuous and uninterrupted throughout the length thereof and accommodating therein a respective column of plural, spaced discharge cells, and plural color phosphor layers (6) of different primary colors formed respectively in the plural elongated cavities and arranged in a repeating succession, in the first direction, of plural sets of linear stripes respectively of said different primary colors (Page 2, bottom right paragraph), each color phosphor linear stripe extending continuously and without interruption within, and substantially throughout the length of, the respective elongated cavity, the plural, spaced discharge cells accommodated therein corresponding to respective, spaced portions of the continuous phosphor linear stripe (Figs. 1 and 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amano (JP 59-108240) in view of Shinada et al. (US 4,725,255).

Regarding claim 3, Amano disclose the claimed invention except for the limitation of a dielectric layer formed on the main surface of the insulating plate, the plural address electrodes and plural barrier ribs being formed on the dielectric layer. In the same field of endeavor, Shinada discloses a substrate assembly wherein a dielectric layer is formed on the surface of the substrate, the plural address electrodes and plural barrier ribs being formed on the dielectric layer in order to provide an undercoat and protective layer which absorbs any unnecessary component of the electrodes and barrier ribs pastes during patterning and baking of the substrate assembly. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the insulating layer disclosed by Shinada in the substrate assembly of Amano in order to provide a undercoat and protective layer which absorbs any unnecessary component of the electrodes and barrier ribs pastes during patterning and baking of the substrate assembly.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amano (JP 59-108240) in view of Wada et al. (US 4,692,662).

Regarding claim 6, Amano discloses the claimed invention except for each barrier rib includes, in a direction transverse to the main surface, a lower and an upper portion, the lower portion being of a first, relatively light color for improving brightness of an image display and the upper portion being of a second, relatively dark color for improving contrast of the image display. In the same field of endeavor, Wada discloses a plasma display panel comprising barrier ribs wherein each barrier rib includes, in a direction transverse to the main surface, a lower and an upper portion, the lower portion being of a first, relatively light color for improving brightness of an image display and the upper portion being of a second, relatively dark color in order to reduce the reflectance of the displaying surface due to ambient light and improve the

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contrast of the display device (Column 4, lines 8-28). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the barrier ribs disclosed by Wada in the substrate assembly of Amano in order to reduce the reflectance of the displaying surface due to ambient light and improve the contrast of the display device.

Allowable Subject Matter

Claims 14-18 and 47 are allowed over the prior art of record.

Claims 2, 7-13, 21, 29, 30 and 32-48 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 2 and 29, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 2 and 29, and specifically comprising the limitation of each color phosphor linear stripe is formed so as to extend in the first direction between and substantially covering, the corresponding, opposed sidewalls of the adjacent barrier ribs.

Regarding claims 30 and 32-40, claims 30 and 32-40 are allowable for the reasons given in claim 29 because of their dependency status from claim 29.

Regarding claim 7, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 7, and specifically comprising the limitation of the plurality of barrier ribs have a common width in the first direction not less than 15 μm .

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Regarding claims 8 and 9, claims 8 and 9 are allowable for the reasons given in claim 7 because of their dependency status from claim 7.

Regarding claims 10 and 12, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 10 and 12, and specifically comprising the limitation of a second substrate to be disposed on the top surfaces of the plural barrier ribs and having plural pairs of display electrodes extending in the first direction and spaced in a parallel relationship in the second direction, the spaced pairs of display electrodes in the second direction defining, with each set of color phosphor linear stripes of the different primary colors, respectively corresponding image elements spaced in the second direction, and each pair of display electrodes, defining, with the repeating succession of plural sets of color phosphor linear stripes respectively of the different colors, a corresponding succession of plural image elements in the first direction.

Regarding claim 11, claim 11 is allowable for the reasons given in claim 10 because of its dependency status from claim 10.

Regarding claim 13, claim 13 is allowable for the reasons given in claim 12 because of its dependency status from claim 12.

Regarding claim 14, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 14, and specifically comprising the limitation of a second substrate disposed on the first substrate, contacting the barrier ribs and enclosing the cavities defined therebetween, the second substrate having plural pairs of display electrodes, thereon, extending in the first direction and crossing the barrier ribs, the corresponding cavities and the associated address electrodes, each pair of display electrodes defining, with the successive sets of color phosphor stripes and respective address electrodes crossed thereby, respective and successive image elements.

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Regarding claims 15-18 and 47, claims 15-18 and 47 are allowable for the reasons given in claim 14 because of their dependency status from claim 14.

Regarding claim 21, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 21, and specifically comprising the limitation of the discharge gas comprising a Penning gas mixture of neon with xenon, about 1-15 mole %.

Regarding claims 41-46 and 48, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 41-46 and 48, and specifically comprising the limitation of the phosphor layer having a thickness in a range of from 10 to 50 μm .

Response to Arguments

In response to applicant's arguments, regarding claims 1, 5, 19, 20 and 22-28, the recitation "surface discharge type AC color plasma display panel" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Particularly, Amano discloses a substrate comprising the limitations as claimed, applicant's disclosed "pair of display electrodes" is not presently claimed in claims 1, 5, 19, 20 and 22-28, accordingly, the rejection is deemed proper.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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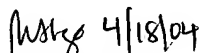
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

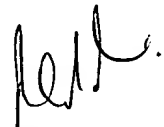
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Mariceli Santiago
Patent Examiner
Art Unit 2879


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